Charles Ezra Scribner Dies

Noted Inventor, for Twenty-three Years Chief Engineer of Our Company, Passes Away in Sixty-eighth Year

CHARLES E. SCRIBNER, actively associated with our Company for forty-two years during twenty-three of which he served as Chief Engineer, died on June 25, at his summer home in Jericho, Vermont, of *angina pectoris*. Mr. Scribner, one of the three greatest electrical inventors this country has known in the last several decades, was credited with holding more patents than any other man save his friend Thomas A. Edison. During his active life, he took out 441.

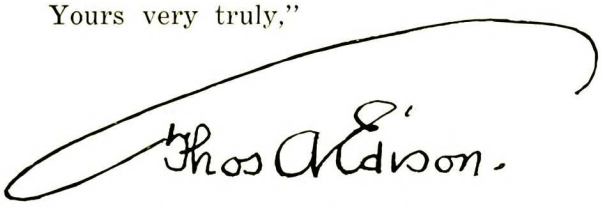
When Mr. Edison heard of Mr. Scribner's death he wrote to the NEWS:

"I HAD a great admiration for his remarkable imaginative power and his ability to visualize and anticipate in minute detail the requirements of the vast technique that has been gradually built up by your Company.

"Mr. Scribner was the most industrious inventor I have ever known. He was apparently indefatigable and his imagination seemed to be boundless. I appreciate the loss your ranks have sustained.

Yours very truly,"

A recent photograph of Charles E. Scribner



Mr. Scribner's story—much of which in an exceedingly modest way has appeared in the WESTERN ELECTRIC NEWS under the title of "Log-Fire Reminiscences of a Pioneer" (a series dictated to and prepared by his son-in-law, Harry L. Grant, Erie District Manager of the Graybar Electric Company)—is an intensely interesting one. It is the story of a boy inventor whose high promise attracted the attention of the late Enos M. Barton, former president of the Western Electric Company, at the outset of his career. In after years, he became Chief Engineer and then, after holding that office for 23 years, he was Consulting Engineer. On January 1, 1919, Mr. Scribner retired.

In his early days Mr. Scribner worked with Mr. Edison on a number of inventions. The first multiple switchboards to be used commercially on a large scale were of Mr. Scribner's design. The electrical circuits employed in inter-communication, switchboards and signalling apparatus, as devised by him, have been adopted not only throughout this country, but in nearly all countries in the world. He was a fellow of the American Institute of Electrical Engineers and in 1900 his work was recognized by the award of a gold medal at the Paris Exposition.

Mr. Scribner was born in New York, in 1858, but spent his boyhood in Toledo. In 1880 he married Margaret Brown, also of Toledo, whom he survived. In 1876 he went to Chicago, taking with him his first invention—an automatic telegraph repeater. The story of his first days with the company he served so long can best be told from the account written for the NEWS by Mr. Barton shortly before his death.

"In the Fall of 1876 the shop of the Western Electric Manufacturing Company was on the third floor of the Kinzie Street building with the shop office, which was lighted by a skylight, in the center of the room, while the general office was downstairs.

"Visiting the shop on a number of occasions I noticed in conference with one of the workmen a rosy-cheeked boy, whose blond hair fell in disorder over his forehead. A part of our business at that time was making models for inventors, and the unusual thing in this case was that there were none of the conventional signs of an inventor about the boy.

"At this period the automatic telegraph repeater, invented by Hicks, was considered one of the most important inventions in electricity since the Morse system had come into use. Experimenters who ten years later would spend their time in devising telephones and who now would try to devise improvements in wireless telegraphy, were at that time giving their attention to telegraph repeaters.

"The boy in question was Charles E. Scribner of Toledo, Ohio, who had devised and patented a repeater which was thought by himself and others to be of commercial value. He had come to Chicago to have the model made with good workmanship in our shop. It happened that when he had paid his bill at the shop office and had his instrument under his arm ready to leave, I met him as he was going away from the counter and, noticing the repeater, asked him some questions about it. I myself was somewhat familiar with the subject and in the course of conversation I found that he understood the principles and details of automatic repeaters, having information on the subject beyond what would be expected from one of his years and one who was not an experienced telegraph operator.

"On learning, through this conversation, that he was just out of high school, I volunteered the suggestion that he take a course in engineering such as that given by the Stevens Institute of Technology. He said

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this was impracticable for him on account of the expense. Whereupon I suggested the possibility of our finding employment for him with our Company. To this suggestion he made no decisive reply and went away without my taking his address.

"A day or two later, probably the next day, I visited the office of General Stager at the Western Union headquarters in Chicago. It happened that young Scribner was calling on General Stager with the cashier of one of the Chicago banks, to whom he had a letter of introduction, with a view to getting his repeater tried out by the Western Union Company.

"As he and his banker friend left General Stager's office, it occurred to me to get his address and I sent someone after him for that purpose, with the thought that I might offer him some definite employment. I did not see the opportunity to employ him directly in the Western Electric, but within the course of a few days I succeeded in getting an appropriation of $25 a month from the Gold & Stock Telegraph Company for an assistant to the inspector of Gray printers, of which there were probably 25 to 50 lines in and around Chicago.

Mr. Scribner at the height of his career

"I wrote to Scribner, offering him the place at $25 a month. Shortly afterward he appeared with a letter from his father to me, asking me to find a suitable boarding place for his son. I took him to my house for the first night and found a boarding place for him the next day. He was to assist C. H. Rudd, the inspector of Gray printers.

"The first training that Mr. Rudd gave him was to create artificially the more common troubles in the lines and instruments and let the new assistant discover the troubles and remedy them. Rudd reported to me after a day's experimenting that his pupil was able to find and remove all the ordinary troubles that occur in the maintenance of printers.

"At the end of another year the business of the Western Electric had grown somewhat and we were able to find employment for the young electrician. His repeater never came into commercial use. The telephone superseded the printers and the boy electrician became one of the foremost engineers and the foremost inventor of telephonic apparatus in the world. He did not give much attention to the construction of telephone transmitters and receivers, but his personality is impressed upon the apparatus used in connection with those instruments to a degree which is unparalleled in the history of the industry.

"Besides his constructive work, which was largely inventions and designs, circuits and systems for telephone use, Mr. Scribner influenced the patent situation of the company very greatly. He understood as though by intuition the critical points of a patent situation and his advice in regard to the electrical and mechanical features of patents was relied upon by officers and attorneys of the company and never failed to prove correct.

"If I had not happened to meet young Scribner in the shop office when he was carrying away his repeater, and if it had not been for the chance meeting the next day in General Stager's office, at which time I obtained his address, his career and the career of the Western Electric would undoubtedly have resulted differently than they did."

Scribner's introduction to Edison was through the following letter, given to him by Mr. Barton in 1879:

"The bearer, Mr. Charles E. Scribner, is the young man that I want to have learn all that is possible about the chalk wheel; how to make it and how to mend it. He will stay with you long enough to take it in."

In 1916, on the occasion of his 40th anniversary with the Western Electric, Mr. Scribner received the following letter from Mr. Edison:

"Our friend, Jewett, tells me that in a few days you are going to celebrate the 40th anniversary of your entrance into telephonic engineering. I am glad to know that after your forty years of hard work you are still 'in the ring' and I want to congratulate you on that and on the splendid record of achievement you have made. May the coming year find you hearty and still full of vim."

When General John J. Carty, Vice-president of the American Telephone & Telegraph Company, learned of the death of Mr. Scribner, he was on his vacation. He wrote in long hand an appreciation of the man with whom he had so long been associated, and had it brought fifteen miles to a post-office so that it might be published in our magazine. It follows:

"THE Semi-Centennial of the Telephone, which is being observed with many ceremonies throughout the country, must now mark the end of the life-work of a great Telephone Pioneer, Mr. Charles E. Scribner.

"Among those who wish to honor his memory and pay tribute to his inventive genius and engineering skill, I wish to add some words of my own as a token of lifelong friendship and high regard.

"I hope it may afford at least some small measure of consolation to those of his family who survive him to know that all of his former colleagues and fellow workers will cherish his memory so that those who come after them may know of him and of his life filled with endeavor and rewarded with success.

"His contributions to the development of the telephone art, long ago placed him in the front rank among the inventors of his time. As I am writing

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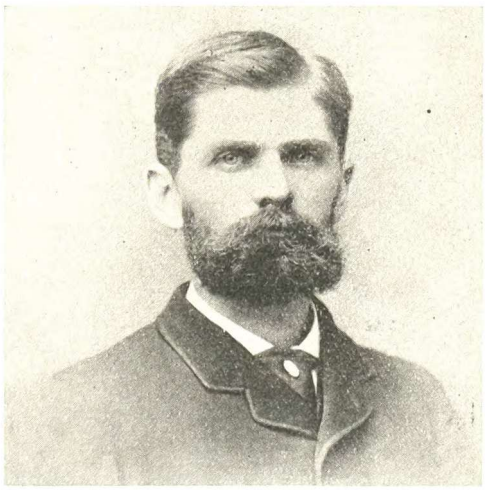
this far away from my office records and other papers from which I might gather the data necessary for an appreciation of Mr. Scribner's work in the building of the Bell System, I cannot do what under other circumstances would be a labor of love.

"I believe that in his inventions he was second in number only to Mr. Edison, with whom he formerly came into frequent association. While Mr. Scribner's inventions covered a wide field in the art of telephony, it is by his developments in the multiple switchboard that he was for so many years known as the most prolific inventor and the most active in promoting its introduction.

"These things he did in the face of obstacles which at times seemed likely to prove disastrous. The multiple switchboard so long ago secured a permanent place in telephone equipment, that it seems almost impossible now to realize that such difficulties could ever have existed.

"The Patent Office Gazette, the patent records of the United States, and those of foreign countries contain abundant evidence of his genius. And, what is most fortunate, Mr. Scribner himself published in his company magazine several sketches which give interesting information about his work. These may now be read by those who have come into the service in later years. To such they will be informing and helpful by the light they shed upon the conditions which surrounded the telephone problems during a large part of the first fifty years.

"For those who were privileged to be numbered with Mr. Scribner among the early Pioneers, they will awaken tender memories of a distinguished Telephone Engineer and Inventor, and a departed friend."



Mr. Scribner in 1885

Pemaquid Harbor, Maine
July 8, 1926.

President DuBois, on behalf of our Company, expressed himself as follows:

"CHARLES E. SCRIBNER was one of that small group of men who came into our Company in its very earliest days and sensing its opportunities persisted through difficulties and discouragements until it became successful and great.

"In this group that Mr. Barton gathered around him were Mr. Thayer, Mr. Patterson, Mr. Jackson, Mr. Welles and Mr. Scribner, men of widely differing talents but each highly competent in his own sphere of activity.

"We who know the Company in its present magnitude sometimes forget that in those early days there was no certainty of its growth or success. The problems then were vital problems involving the very existence of the business, so that these pioneers of forty and fifty years ago carried a real burden of responsibility.

"Mr. Scribner was the inventor of the group, the man who in the rapidly emerging art of telephone could 'find the way to do it.' The telephone having been produced, the great problems of the day centered about the methods of interconnection of large numbers of telephones. In this field Mr. Scribner was an unquestioned leader and his inventive genius was largely responsible for the position the Company had attained in switchboard manufacture when it became a part of the Bell System. He was thus the founder of the Engineering Department which has now become the Bell Telephone Laboratories.

"Mr. Scribner's tastes were simple, his modesty as to his achievements was notable, and his friendliness with everybody was a marked characteristic. He was an active force in the telephone industry for many years and although he retired several years ago, we shall always honor his memory as one of the significant builders of our Company."

Frank B. Jewett, President of the Bell Telephone Laboratories and Vice-President of the American Telephone & Telegraph Company, wrote as follows:

"TO those of us who had the privilege of knowing him intimately during the period of his active participation in the development of telephony and telegraphy, the death of Charles E. Scribner brings vividly to mind the fact that the communication art has lost one of its stalwart pioneers. In addition those of us who were his close associates in the daily life of the work which absorbed him, realize that in his passing we have lost a kindly friend—a man ever interested to help in the solution of our problem, always gratified at their successful solution and always sympathetic in our disappointments.

"To the young man who twenty or twenty-five years ago embarked for a life career in the Bell System, the name of Scribner was a name to conjure with. No matter in which direction one turned he was sure to find the record of Scribner there before him. It seemed as though the telephone business was in large measure Scribner, so varied, fruitful and prolific were the constructive evidences of his vivid imagination, his ingenuity and his untiring devotion in the development of the tool which Bell had given to the world.

"When years after my joining the Bell System family I became Assistant Chief Engineer of the Western Electric Company,

(Continued on page 38)

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(*Continued from page* 4)

Mr. Scribner's assistant, I came to have an added respect for him. The years spent in daily association with him in the doing of a common task, and in guiding the growth of an expanding organization, were happy and profitable years for me. When in 1916, after forty years of continuous labor, Mr. Scribner felt that he had earned the right to a fuller enjoyment of the things which had been his avocations, and I became his successor as Chief Engineer, it was with a feeling much as though he had entrusted to me the guardianship of one of his children. The great Research and Development Department which had grown up with and about him was in fact his child. It was blood of his blood and flesh of his flesh, and in the nearly ten years which have elapsed since he relinquished his active guardianship he has never ceased to consider its habitation as a home in which he was always welcome, and in which he could always find the infinite pleasure of new and unfolding things.

"Bell Telephone Laboratories is the sturdy oak which has grown from the acorn which Charles E. Scribner planted fifty years ago. That it is a robust symmetrical tree is due in large measure to the intelligent solicitous cultivation which he gave to the stripling thing which first emerged from the acorn. Whatever are now or may be the accomplishments of the Laboratories in their relation to an advancing art, they can never be dissociated from Mr. Scribner's life. Without him and without the things which sprang from his fertile brain much of the foundation on which our present telephone art rests would be lacking or incomplete."

July 9, 1926.

F. R. Welles, who for many years was associated with our foreign business and retired some years ago as a Vice-president of the International Western Electric Company, was intimately associated with Mr. Scribner for many years. He sent, when he learned by cable of the death of his old friend, the following communication to the NEWS:

"IN the latter part of 1876 a Toledo boy of 18 got his first job from Mr. Barton as inspector of Gray printers on leased private lines in Chicago. He was a bright, likable boy, and I took him in as chum in the old Chicago University, in the quarters assigned the Observatory for the time observer. (The old University, near 35th Street, was long ago demolished.) George P. Barton was the regular observer, but was away that winter completing his college course at Rochester, and I was nursing his astronomical job in his absence. So I had room temporarily for another chum.

"The boy was Charles E. Scribner and his salary $25 a month. In comparison I was a nabob, my pay as first and only stenographer having lately been raised to $15 a week from the initial $10.

"Those were pre-telephone days. The Gray printer had an alphabetical keyboard which anybody could work, the message being typed at both ends on paper tape. It was subject to ailments all its own, and when trouble was reported anywhere it was Scribner's job to go on foot or by street car, test out the instrument and put it right on the spot if he could, or take it to the shop if he struck something serious. He had a screwdriver and pliers in his pocket, but his only testing instrument was his tongue. I have seen him open up an instrument and touch his tongue to one place after another until a shock made him jump. The trouble was found!

"Some of the printer lines were leased to the street car company. The men on those ancient horse-cars, seeing Scribner travel on a pass and dart in and out of the company's office, set him down as a spy on their takings—no bell punch in those innocent days—and remained suspicious until one day he came out of the office carrying a printer, when there was an explanation and a laugh, after which they were pals.

"The next year he was transferred to the factory as "Electrician," and soon turned to inventing, which he had begun as a boy at Toledo by inventing a telegraph repeater for use on lines built by a group of boys from house to house, under his leadership. He quickly gave himself up entirely to the telephone, just showing up as a field of future development. By 1878 the outlook opened still wider. In that year and in 1879 rudimentary telephone exchanges were built.

"Scribner has given the W. E. NEWS some reminiscences, all too brief and in modest form, of those early days, half a century ago, of which survivors are now scarce.

"He had a nervous, high-strung temperament, and used to say that he never expected to live to be 40. He worked fast and at high pressure, and needed a rest after a couple of hours of intense effort. He could not stand a whole day at the desk.

"When development once got under way he took as his province the main problem in the situation, the switchboard for large offices, and devised the multiple, or the 'duplicate switchboard,' as it was first called. In those days an exchange of one or two thousand subscribers was a 'large office.'

"With Scribner on the switchboard and Patterson on the cable the farsighted guidance of E. M. Barton kept the Western Electric for many years at the head of the telephone inventing game. Co-operative laboratory development, laying all the sciences under contribution, had not yet dawned. The inventor knew the state of the art and the problems to be met, and evolving the solution from his inner consciousness proceeded to test it out himself in practice.

"The main features of switchboard development for large exchanges were due to Scribner. He did not originate the central battery system, but when its feasibility became evident he took it up and carried on the development. That is, he never shut his eyes to the inventions of others, any more than did Patterson, who was not the first to use paper for cable insulation, but promptly accepted it as superior to cotton, as he did the passing of the cable through the lead press, instead of drawing it into the pipe, his original method.

"The switchboard story is fully told by J. E. Kingsbury in 'The Telephone and Telephone Exchanges' (London, 1915). In that work, which is authoritative and abundantly documented from early source material, the leading part played by Scribner comes out clearly.

"After some four years in Chicago Scribner suddenly took on the habit of going to Toledo every Saturday night 'to see his mother,' returning Sunday night. Having made friends of the express men on the Chicago-Toledo night run he rode free in the express car. Going almost without sleep for two nights he was little good for work the first days of the week afterwards. This went on for some months when Mr. Barton sized up the situation and told him bluntly 'Better marry the girl.' When that recommendation was followed, in 1881, I had the pleasure of receiving the young couple in New York, where I was then stationed. Mrs. Scribner was universally esteemed and was sincerely mourned by her many friends on her sudden death several years ago.

"After my transfer to Europe at the end of 1881 I naturally saw less of Scribner, meeting him only on my occasional brief visits to America, or when he came over to help us out on European questions. Then as now America led the dance. Most problems arose there and were solved there first. In Europe we simply utilized American results, avoiding the risk and cost of inventing and experimenting for ourselves, our principle being to do no inventing or experimenting unless we had to. With the Western Electric leading the procession we had first call on developments, so that we kept ahead of European competitors. This was perhaps the main element in the building up of a business covering the greater part of the world, out of an investment of 250,000 francs in Antwerp, a business lately sold for many times the original cost, after paying for extensions and profits besides. Every other American electrical concern lost money in Europe, as did the European concerns who tried manufacturing in America.

"Under these circumstances Scribner's counsels were of the greatest value, and he came over now and then to keep us up to date on developments and to help out on any special problems. Thus he and I had occasion to work together in Antwerp, Berlin, London, Paris, Rome and elsewhere, always in good will and mutual confidence.

"The art was then in its infancy and 'Engineering' was unborn, but we met our difficulties and somehow managed to get on top of them. Now all is changed and the art is very difficult and complicated. There is no place for another Scribner.

"On the passing of 'an old timer,' some 15 years ago, Charles A. Brown remarked 'There are few of us left.' There are now still fewer, very few indeed. You can count the real pioneers on your fingers. Soon there will be none, and it is well that early archives are being carefully treasured in the historical collection at 195 Broadway."

Bourré, France, June 29, 1926.

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